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THE INFLUENCE ON CUSTOMER SATISFACTION BY THE APPLICATION OF THE CONCEPT OF BIG DATA AND CRM IN MARKETING

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Abstract

Big Data and the development of relationships with customers (hereinafter: CRM) are business concepts that enjoy increasing application and popularity, and also influence the improvement and more advanced marketing that companies apply. Big Data refers to the collection of a huge amount of data that is then processed, stored and used correctly to make the best possible decisions at the right time, while a CRM business information system aims to direct the activities, services or products of a company to the customer while building relationships and thereby increasing the value both for the company and for the customer, focusing on his needs and desires, which is the essence of the marketing concept. The amount of data is increasing every day as a result of the development of digital technology and the possibilities it provides, and thus the number of touch points directed towards users for data generation and communication has also increased. The speed with which connected data is collected, analysed and used contributes to this. Large amounts of data are generated by various sources, including points of sale, customer and credit cards, and network servers. Similarly, unstructured data analysis in the form of e-mails, free texts on websites, or consumer surveys are commonly used in marketing for the purpose of researching customer satisfaction.

The paper shows the usefulness of applying the concept of Big data in the strategy of developing relations with customers as well as managing customer satisfaction on the example of Amazon.

Keywords: *developing customer relations (CRM), marketing, marketing strategies, customer satisfaction*

JEL classification: M31

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INTRODUCTION

The term Big Data refers to large amounts of different types of data that are quickly generated from a large number of sources, i.e. to amounts of data that are too large or too complex for typical relational databases to be managed and processed in a timely manner, and are characterized by: large volume, high speed, video/audio, gadgets and other big data sources. The trend of collecting a large amount of data and using it for different purposes has changed the way of doing business, considering that data collection and use provides different advantages such as: development of targeted campaigns, predictions of future activities, customer requests, different analyses and the like.

Kotler (2006) identifies two main characteristics that divide data into two basic types. The first is that data is generated from various devices, such as smartphones and tablets, and the second is that a huge amount of data is collected that cannot be used in a productive and usable way. This is why data can be divided into two categories: structured and unstructured. Structured data is any data that can be stored, accessed and processed in a predetermined format. Gutić et al. (2011) state that this is data that is defined in a special way. Numbers, dates, combinations of words and numbers, as well as client addresses and the like. They are placed in a convenient place where they will be used again because of the already determined shape. New technologies favoured organized data from new sources. Data sources are divided into two categories. The first level one is where the computer and the second level generate the data is where a human interacting with the computer generates the data. Unstructured data is all data of indefinite form or organization and presents various obstacles in terms of processing in order to extract value from it, in addition to its enormous amount. A good example is a heterogeneous data source that includes a mixture of simple text files, photos, videos, and other types of unstructured data.

In marketing, where the focus is on the customer, his needs, desires and value creation, the effective use of Big data helps in segmenting ads, personalization, developing relationships with customers, defining different pricing strategies, understanding consumer behaviour, optimizing different strategies related to elements of the marketing mix, customer loyalty, tracking customer values and a number of other elements that are important for developing effective marketing strategies.

The paper shows the usefulness of applying the concept of Big data in the strategy of developing relations with customers as well as managing customer satisfaction.

USE OF DATA IN MARKETING

Satisfaction is the result of fulfilled expectations. Perception is defined as the process by which an individual selects, organizes and interprets stimuli into a meaningful and coherent picture of the world. It can be described as the way we see the world around us (Schiffman et al., 2004:141). Customer satisfaction derives from the fulfilment of customer expectations based on perception. Expectations as well as satisfaction are variable categories and precisely because of this fact it is necessary to continuously monitor and listen to customers' reactions, respond in a timely manner and adjust products and services according to their requirements and needs (Guzovski, 2021). Knowing and understanding consumer behaviour is the task of marketers who collect various data about their customers and create certain databases. Marketing helps in attracting customers, partners and establishing partnership relations with both customers and suppliers.

According to Kotler (2008), marketing is the process by which companies acquire customers, develop relationships with them and create value for them. The goals that are achieved through the application of the marketing concept are customer orientation, the fulfilment of needs and desires through the value of the products and services offered to them, and the fulfilment of expectations leads to a satisfied customer towards whom further strategies for developing relationships can be planned and developed. In order for companies to be able to fulfil all these requirements, a good knowledge of customers is necessary, and this is exactly what databases make possible.

The customer database is an updated and simple collection of various data about individual customers or potential customers that can be used for marketing purposes. Such as acquiring production, qualifications, selling products or services or maintaining customer relationships. Different ways of using big data are mentioned in marketing. According to Spencer (2014), the strategies used based on big data are: monitoring google trends, use of digital data, real-time display, identification of specific content, use of analytics to improve efficiency. Monitoring Google trends refers to the display of total searches according to trending topics and enables the creation of content that is interesting to customers. Through the use of digital data and the application of analytics, it is possible to get to know your target customers better (which websites they visit, social network profiles they have, personalization of ads, etc.) so that messages are transmitted in real time, i.e., the appropriate message is transmitted at the right time. Great campaign and effective interaction a customer relationship with a brand can be built on the foundations of timeliness and relevance. Binding digital behaviour in systems for developing relations with customers enables

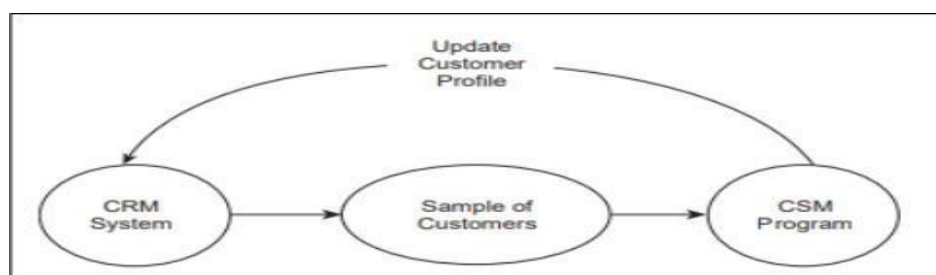
the monitoring of certain topics as well as the sending of targeted content that is targeted and has the possibility of further actions based on the information sent.

On the basis of digital databases, it is possible to identify content and monitor the behaviour of customers in the entire sales process, which is cyclical in the digital environment, and customers can be followed at any time on their way through the purchase decision-making process, as well as analyse the reasons for possibly giving up or abandoning the purchase process. This allows marketers to develop a strategy based on the content that most resonates with their customers and drives them to buy. Models are also being developed that accurately predict future behaviour, and are generated using a core database of customer relationship management and other online data.

DEVELOPMENT OF RELATIONS WITH CUSTOMERS AND INFLUENCE ON SATISFACTION

Developing relationships with customers plays an important role in fostering customer satisfaction. Satisfied customers are a value for the company not only because they make repeat purchases, but also because they pass on their positive experiences and thus attract new potential customers, increasing their market share. Satisfaction is impossible to achieve without a well-implemented system and customer understanding. Customers should be understood in terms of their tastes, attitudes, preferences and elements that influence their decisions. No company can provide satisfactory service to all of its consumers, which is why it is crucial to properly define your target market. According to Vranešević (2000), there is a connection between the CRM system and the customer satisfaction measurement program (CSM). Figure 1 shows their dual nature of relationship. The CRM system clearly generates customer samples for the satisfaction program. After that, the customer's feedback is entered into the CRM system, assuming the customer or the response agrees. Longitudinal analysis of CSM data can be used to assess CRM system performance.

Figure 1. Relationship between CRM and CSM – a



Source: Vranešević, T., (2000): *Upravljanje zadovoljstvom klijenta*, Zagreb: Golden marketing

Customer relationship management has a significant impact on customer satisfaction and loyalty. The dependent variables of satisfaction and loyalty have a favourable relationship with CRM. Customer satisfaction is greatly influenced by employee behaviour and relationship building. Relationship development can be increased through a variety of approaches, including educating customers about offers, thanking consumers to encourage them to buy more, and assuring customers that their feedback is taken seriously and used for overlooked purposes.

ORGANIZATION, TYPES AND MANAGEMENT OF CRM

The customer is king and everyone involved in the sales process should strive to provide value to them. CRM, which has become an essential component of modern life, helps in this endeavour, and refers to the activities carried out by a company to establish and maintain relationships with its customers (Kalaighnam and Varadarajan, 2012). Customer relationship management (CRM) is a company strategy that focuses on customers and their requirements. The goal of such a strategy is to build relationships and handle critical data. The application of CRM increases sales per customer, increases the loyalty of existing customers and improves the relationship with customers, because the needs and wishes of customers are taken into account, and communication is no longer only one-way, but two-way.

Kotler (2008) defines CRM as a technique of understanding each client as an individual with a specific decision. CRM considers how to treat each customer as an individual and use their favourable decision for the company's profit. It also includes more modern marketing activities and management techniques, such as customer loyalty and marketing databases. When aligning the business with the customer relationship model, three key factors should be taken into account. The first is about customer retention, the second is about customer development, and the third is about "rejecting" those who can't provide value over a long period of time. Relationship marketing systems combine strategy, IT and relationship marketing when delivering value and take them into account individually (Guzovski, Nedović and Vučko, 2019). All CRM activities are carried out in order to consequently achieve the goals of higher profitability and achieve greater customer loyalty (Renić and Mandić, 2018). CRM is divided into three components: strategic, operational and analytical.

Interactions with customers are largely shaped by strategic CRM. Its main goal is to concentrate on customer knowledge and regularly improve it to improve interactions and preserve long-term relationships with customers. Car (2013) states that strategic CRM is focused on establishing and creating a customer-centric business culture. As a

goal, it gives advantages to the acquisition of new customers and the retention of existing ones, by creating values that are superior to competitors. Many businesses today state that customer focus is their primary strategy. However, in the end it turned out that this was not entirely true. Due to its customer-oriented approach, it competes with other business orientations, which are related to product, operational excellence or sales and others.

The level at which certain duties are performed is called operational CRM. In other words, operational CRM deals with the creation of data that is then stored in numerous databases, is responsible for communication with consumers and is the link between all other components of the company, allowing the automation of all processes and the coordinated action of all functions. Johnson (2016) adds that operational CRM enables several customer-centric functions, such as marketing, sales, and service, to be performed at any time throughout the company. All of this can be done through an operational CRM, including tracking customer data, tracking various sales processes, and generating leads. Basically, an operational CRM will consolidate contact information, order history and all previous data from previous exchanges between customers and companies in one place (Spencer, J. 2014).

Analytical CRM includes in-depth analysis, which makes it the longest and most expensive part of the CRM system. Analytical CRM does not communicate directly with customers, but they process huge amounts of data generated by operational and strategic CRM. The entire analytical CRM function is built on data processing and storage. Setting and executing results, evaluating, identifying and designing rules and techniques for optimization and collecting key consumer data from multiple sources are among its other aspects. Analytical CRM is a type of CRM that handles the analysis of customer data for various purposes. It is usually used to plan and execute marketing campaigns with the aim of increasing marketing effectiveness.

CRM is implemented in phases, with separate modules implementing the module's features and functionalities. CRM has its own requirements that must be integrated with other company systems, and there are certain functionalities such as: records of communications and contacts (user activities are recorded, such as requests, problems and comments), user description, sales process.

The benefits of CRM can extend beyond the company's operations and interactions with customers. An ideal CRM system, according to Taylor (2014), should help a company improve relationships with existing customers, find new ones, and re-engage past customers. In addition, a number of other benefits are defined, including: improvement of customer service, discovery of new customers, faster closing of the sales cycle, increased sales and upgrades, easier customer targeting, increased

customer loyalty, internal communication, etc., while the transition from manual to automated processes, the psychology of monitoring and the short-term slowing down of processes are considered the main disadvantages of CRM. A successfully applied CRM system, supported by databases and based on customer value as its main benchmark, enables the company to achieve strategic advantages (Kumar and Reinartz, 2018).

CUSTOMER SATISFACTION MANAGEMENT USING CRM

The long-term success of the company depends on customer satisfaction, and the fulfilment of expectations leads to customer satisfaction, which will spread positive experience and opinion and thereby attract new potential customers. Customer satisfaction is a subjective assessment of how well a product meets customer expectations and needs. The degree of satisfaction is one of the factors that determines the existence of a company on the market. Due to the constant need for new and retaining old customers, satisfaction monitoring is an indispensable element of business. Since satisfied customers spend more and are eager to help communicate with the improvement of existing products and services, satisfaction management is an important component of business. A positive image, the fulfilment of expectations, the satisfaction of needs and desires, etc. affects the retention of customers who are a special material value for the company. Dissatisfaction and a negative customer experience can trigger a series of reactions that can adversely affect future purchases as well as the company's operations.

Developing relationships with customers and focusing on their needs and desires and meeting their expectations should be a priority of marketing strategies. Some of the elements that help to influence and monitor customer satisfaction according to Kotler (2008) are the monitoring of customer complaints and suggestions, customer satisfaction surveys, monitoring of purchase procedures as well as customer loss analysis. Good knowledge of customers, their needs and desires, understanding them and monitoring their behaviour are just some of the steps that ultimately affect their satisfaction. According to Gutić et al. (2011), following up on client complaints and suggestions is a continuous process in which clients believe that problems will be resolved in their favour and in a short period of time, which affects their loyalty. Various surveys that are carried out electronically as well as by telephone help as feedback on the purchase process and improvement of all elements of the purchase or sales process in communication with the customer. One of the methods used for perfecting the buying process in which customers will be satisfied are also mystery shoppers who collect information at the point of sale about the company's customer relations. One of the elements is the analysis of lost customers, i.e. those customers who left the company and the possibilities of their return. This is one of the most

difficult elements, considering that dissatisfied customers who are no longer customers because of their bad experience do not want to express their opinion. Measurement of satisfaction, related to different survey tools, optimization of increasing the response rate, as well as data collection and analysis necessary for further improvement of the process that will meet customer expectations and influence satisfaction.

Customer relationship management can be strategic, operational and analytical. Strategic customer relationship management is based on the integration of people, processes and technology in order to build profitable relationships with individual clients while contributing to the overall development of the economy. This structure aims to attract and retain customers by creating and delivering value at a higher level than the competition. Operational databases store all customer data that are connected to other company information systems that enable automated marketing (market segmentation, campaign management, event marketing), sales (contact management, customer portfolio management, offer management, customer performance purchasing) and services (customer portfolio management, offer management, customer performance purchasing). Also, management based on databases enables the creation of a network of relationships both with customers and with business partners, where technology is used for promotion, communication and cooperation with stakeholders as well as for various analyses and future predictions of certain trends. It is possible to collect all relevant information for the subsequent preparation of strategies by evaluating different perceptions, organizations and products in order to fulfil expectations and influence customer satisfaction.

Vranešević (2000) states that the satisfaction study should be organized as a multi-step procedure. It must also be ongoing and fresh insights can be gained during its implementation. It is crucial that each company develops this process according to personal goals and capabilities. Setting objectives, choosing the type of research, collecting data, processing and analysing data and using them in the implementation of strategy setting are part of the research process.

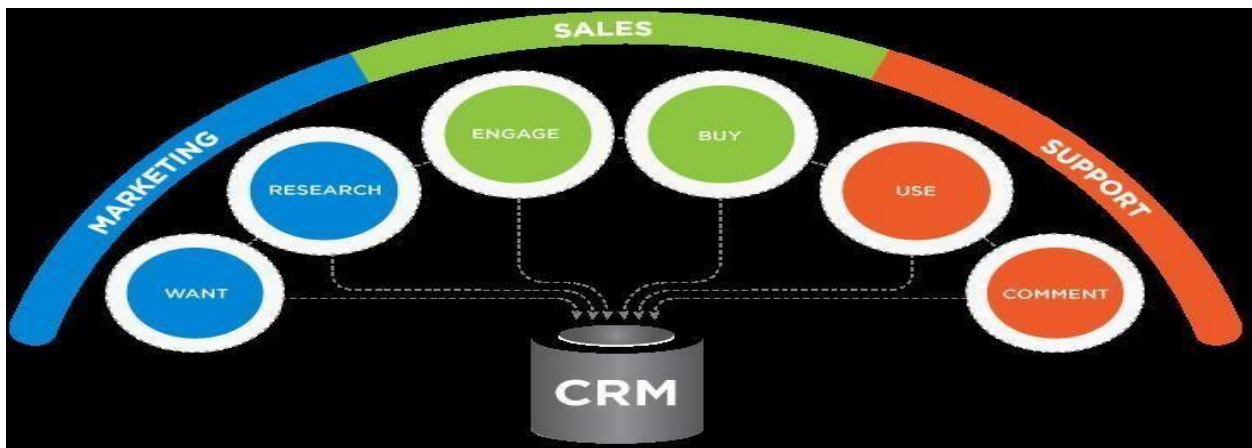
Customer satisfaction research is extremely important because it affects customer retention and loyalty. A satisfied client is one who promotes favourable views of products and services, remains loyal, buys more than once, is less sensitive to prices, etc.

APPLICATION OF THE SYSTEM IN PRACTICE - THE EXAMPLE OF AMAZON

Amazon is the largest online store in the world. The corporation successfully manages millions of customers around the world without ever meeting them face-to-face, a phenomenon known as the "Amazon effect". Customers find everything they need in

one place. The shopping experience is very simple and easy to use. It offers a simple user interface, saves personal data and card data, which enables quick and simple transactions, i.e. buying products with one click. Users also benefit from product recommendations based on previous purchases, a strategy that has proven very successful both on the website and on Kindle devices. This smart use of consumer data ensures Amazon's customers feel valued and also helps the company continue to develop new ways to retain and attract customers. Amazon has developed its own CRM software to meet specific consumer and business requirements. Amazon can use its software to save user data and tailored to their requirements and needs, saves user data, such as previous purchases and locations, and uses it to instantly customize the user experience on their site. Also, the system resolves the vast majority of customer inquiries before they require human intervention. For example, each customer has easy access to their purchase history, which allows them to see which products they have ordered, where they are in the delivery process, and how much the selected purchases are worth. The return policy is automated, minimizing customer support staffing requirements and associated costs.

Figure 2. Example of different ways of using CRM



Source: Chakrawarty, A., (2017), Amazon's customer relationship management strategy, <https://www.linkedin.com/pulse/amazons-customer-relationship-management-strategy-atul-chakrawarty/>, accessed 15.09. in 2021

The end-to-end approach of Amazon's CRM is customer-centric, providing them with a seamless and secure digital shopping experience. Customers become devoted followers of Amazon's marketplace as they no longer have to worry about product quality or rely on customer service staff to make a purchase (Folio, 2020).

The CRM system is used by Amazon for: obtaining information (user registration through personal accounts), storing personal data (easier future purchases), recommendations (offering products based on previous purchase behaviour),

customer service (completely processed online through the user account), Kindle store and others.

One of the most valuable assets of a company is its customer base, because it is the customer who turns a company into a brand, and if a company fails to meet consumer expectations, it will most likely collapse. The term Big Data refers to technology that helps manage huge amounts of data. For a company, data refers to all the critical information it has about its customers, market insights, and even the marketing plans of its competitors. All this data is examined and used to develop strategies. Amazon's recommendation system uses its data. When a user searches for a specific product, this information helps the platform determine what else the person might be interested in. As a result, Amazon can improve their process to encourage customers to buy even more. Amazon obtains personal information about each of its customers when they use the website. In addition to the products customers buy, Amazon tracks what they've viewed, their shipping addresses, and the reviews they've written. Big Data has played a significant role in establishing Amazon as a prominent e-commerce platform. Manufacturers monitor inventory to ensure that orders are filled quickly. Big Data allows the consumer to choose the nearest warehouse, thereby reducing transportation costs (Pathak, 2021)

Amazon is a leader in collecting, storing, processing and analysing the personal data of every customer to find out how they spend their money. For focused marketing, the organization uses predictive analytics, which helps to improve customer satisfaction and increase their loyalty, and they achieve this through the use of: virtual assistants, a system of personalized messages (based on the behavioural characteristics of customers), one-click ordering (30 minutes to make a final decision about purchase), anticipatory delivery model (application of Big Day to predict what a consumer is likely to buy), Kindle book recommendations and more.

The implementation of Big Data, after Amazon has collected all the key information related to the consumer, allows it to be presented to the consumer in an easier and simpler way using methods such as: supply chain optimization (connecting with manufacturers and monitoring inventory status with the possibility of locating the nearest warehouse customer or supplier), cost optimization (prices are determined based on online activity, according to competitors, product availability, item preferences, order history, estimated profit margins, etc.), search for evidence in purchase and return requests (assessed by Big Dan suspicious customers and restricts those who have too many returns), product suggestions and more.

Figure 3. View of the Amazon Personalize system



Source: Pathak, R., (2021.), How Amazon uses Big Data, <https://www.analyticssteps.com/blogs/how-amazon-uses-big-data>, pristupljeno 20.09.2021.

The launch of "Amazon Personalize" enables an easy-to-use and versatile platform for making suggestions to customers in virtually any industry. The application of Big data in business as well as CRM systems enabled the inclusion of customers in customized choices, purchase promotion, successful interaction and other positive experiences due to which consumers and Amazon users recognize Amazon as a place where they can get almost everything they need.

CONCLUSION

Customer interactions should be a reality for every organization. The key is to build and maintain relationships based on these interactions. Customer satisfaction is a critical aspect in achieving business success or failure. Satisfied customers are the main drivers of everything, so special attention must be paid to them. Every day, people acquire huge amounts of data without even realizing it. Data may be collected from various sources for specific purposes.

The Big Data concept refers to the collection of huge amounts of data that are then scrutinized over time and used to improve the company's systems. Volume, adaptability and speed are three criteria that must always be taken into account. It has proven incredibly effective as a stand-alone system in all aspects of marketing, as well as part of a customer satisfaction approach. It is crucial to understand not only the analysis of structured and unstructured data, but also how to differentiate between essential and non-essential data because while quantity of data is not always the solution, quality of data is critical in many circumstances. The CRM system helps the

company in directing products, activities, services and procedures in accordance with the requirements and needs of clients. Putting the customer in focus has several benefits, including improved value, business success, improved customer connections, etc. Finally, a CRM system is divided into three parts: strategic, operational, and analytical. Although its installation is time-consuming and requires great attention at every stage, there is no doubt about its good impact on business and achieving deeper relationships with customers.

The improvement of their business with the application of CRM and the use of Big Data is applied by many companies, including Amazon, which is partly shown in the paper. The use of CRM enables easier access to information, easier storage of personal data, and especially Amazon's recommendations, which were among the first to be introduced to the market and provided a very simple way to increase sales. Furthermore, Amazon has also maximized the implementation of Big Data through its use for supply chain optimization, cost optimization, controlling for evidence of fraud in purchase and sales requests, persuading customers to buy more, monitoring and more. The data collection process begins the moment the user visits the website. Today it happens so often that we don't even notice.

These two systems can work together to provide businesses with many benefits, including better organization, product and service development, customer and transaction tracking, customer targeting, process improvement, better decisions, more accurate analysis, and better customer relations. In the future, more and more companies should recognize the value of good connections with users, as well as the compatibility of these two systems, and start employing them more in the implementation of their strategies and goals. Because, in the end, the best is a "win-win" situation in which consumers, as well as the company, profit.

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